PENDING CLAIMS AFTER AMENDMENTS ARE ENTERED

24. (Once Amended) A method for comparing the analyte profiles of mammalian breath samples, said method comprising:

(a) contacting an array of sensors with a first sample of mammalian breath to identify analytes in said first sample; and

(b) storing the results of the analysis of said first sample in a computer-readable format;

(c) contacting an array of sensors with a second sample of mammalian breath to identify analytes in said second sample; and

(d) comparing the results of said second sample with the stored results of the analysis of said first sample, thereby comparing the analyte profiles of mammalian breath samples.

26. (As filed) The method of claim **24**, wherein said analyte is a marker gas.

27. (As filed) The method of claim **26**, wherein said marker gas is a member selected from the group consisting of alkanes, alkenes, alkynes, dienes, alicyclic hydrocarbons, arenes, alcohols, ethers, ketones, aldehydes, carbonyls, carbanions, polynuclear aromatics, biomolecules, sugars, isoprenes isoprenoids, VOC, VOA, indoles, skatoles, diamines, pyridines, picolines, an off-gas of a microorganism and fatty acids.

28. (As filed) The method of claim **27**, wherein said marker gas is an off gas of a member selected from the group consisting of Prevotella intermedia, Fusobacterium nucleatum, Porphyromonas gingivalis, Porphyromonas endodontalis, Prevotella loescheii, Hemophilus parainfluenzae, Stomatococcus muci, Treponema

denticola, Veillonella species, Peptostreptococcus anaerobius, Micros prevotii, Eubacterium limosum, Centipeda periodontii, Selemonad aremidis, Eubacterium species, Bacteriodes species, Fusobacterium periodonticum, Prevotella melaninogenica, Klebsiella pneumoniae, Enterobacter cloacae, Citrobacter species and Stomatococcus mucilaginus.

29. (As filed) The method of claim **24**, wherein said array of sensors comprises a member selected from the group consisting of a surface acoustic wave sensor, a quartz microbalance sensor; a conductive composite; a chemiresistor; a metal oxide gas sensor and a conducting polymer sensor, a dye-impregnated polymer film on fiber optic detector, a polymer-coated micromirror, an electrochemical gas detector, a chemically sensitive field-effect transistor, a carbon black-polymer composite, a micro-electro-mechanical system device and a micro-opto-electro-mechanical system device.

30. (As filed) The method of claim **24**, further comprising generating a response from said sensors and inputting said response to a neural net trained against known marker gases.

31. (As filed) A method for comparing the analyte profiles of mammalian breath samples, said method comprising:

(a) contacting an array of sensors with first sample of mammalian breath;

(b) detecting a first set of responses from said array of sensors, wherein said set of responses is a first sensor array response profile;

(c) analyzing said first sensor array response profile to identify analytes in said first sample;

(d) storing said first sensor array response profile and the results of the analysis;

(e) contacting an array of sensors with a second sample of mammalian breath;

(f) detecting a second set of responses from said array of sensors, wherein said set of responses is a second sensor array response profile;

(g) analyzing said second sensor array response profile to identify analytes in said second sample; and

(h) comparing the results of the analysis of said first and second breath samples.

32. (New) The method of claim 24 or 31, wherein the comparing the results is diagnostic of a lower respiratory tract infection.

33. (New) The method of claim 24 or 31, wherein the comparing the results is diagnostic of an upper respiratory tract infection.